SEQUENCE LISTING

- <110> FOWLKES, DANA M.
 BROACH, JIM
 MANFREDI, JOHN
 KLEIN, CHRISTINE
 MURPHY, ANDREW J.
 PAUL, JEREMY
 TRUEHEART, JOSHUA
- <120> YEAST CELLS ENGINEERED TO PRODUCE PHEROMONE SYSTEM PROTEIN SURROGATES, AND USES THEREFOR
- <130> 60638CON(50370)
- <140> 10/600,003
- <141> 2003-06-18
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- <151> 1999-04-05
- <150> 08/322,137
- <151> 1994-10-13
- <150> 08/309,313
- <151> 1994-09-20
- <150> 08/190,328
- <151> 1994-01-31
- <150> 08/041,431
- <151> 1993-03-31
- <160> 135
- <170> PatentIn version 3.5
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- Ile Pro Ala Glu Ala Val Ile Gly Tyr Leu Asp Leu Glu Gly Asp Phe 35 40 45
- Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu

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Lys Pro Gly Gln Pro Met Tyr Lys Arg Glu Ala Asp Ala Glu Ala Trp 50 55 60

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oligonucleotide

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oligonucleotide

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<213> Saccharomyces cerevisiae
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cgggatccga tgcaattttc aacatgc
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<213> Saccharomyces cerevisiae
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gctctagatg ctactgatcc cgc
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<400> 60 cgccgcatga ctccattg	18
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<210><211><211><212><213>	31	

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Phe	Leu	Gln	Asn 20	Lys	Arg	Ala	Asn	Asp 25	Val	Ile	Glu	Gln	Ser 30	Leu	Gln		
Leu	Glu	Lys 35	Gln	Arg	Asp	Lys	Asn 40	Glu	Ile	Lys	Leu	Leu 45	Leu	Leu	Gly		
Ala	Gly 50	Glu	Ser	Gly	Lys	Ser 55	Thr	Val	Leu	Lys	Gln 60	Leu	Lys	Leu	Leu		

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His Gln
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<210> 83

<211> 65

<212> PRT

<213> Saccharomyces cerevisiae

<400> 83

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Lys Ala Gln Arg Glu Ala Asn Lys Lys Ile Glu Lys Gln Leu Gln Lys 20 25 30

Asp Lys Gln Val Tyr Arg Ala Thr His Arg Leu Leu Leu Gly Ala 35 40 45

Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu His 50 55 60

Val 65

<210> 84

<211> 58

<212> PRT

<213> Saccharomyces cerevisiae

<400> 84

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser 1 510

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg 20 25 30

Glu Val Lys Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr 35 40 45 .

Ile Val Lys Gln Met Lys Ile Ile His Glu 50 55

<210> 85

<211> 58

<212> PRT

<213> Saccharomyces cerevisiae

<400> 85

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Val Glu Arg Ser 1 5 10 15

Lys Met Ile Asp Arg Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Lys 20 25 30

Glu Val Lys Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$

Ile Val Lys Gln Met Lys Ile Ile His Glu 50 55

<210> 86

<211> 67

<212> PRT

<213> Saccharomyces cerevisiae

<400> 86

Met Ala Arg Ser Leu Thr Trp Arg Cys Cys Pro Trp Cys Leu Thr Glu $1 ag{10} ag{15}$

Asp Glu Lys Ala Ala Arg Val Asp Gln Glu Ile Asn Arg Ile Leu 20 25 30

Leu Glu Gln Lys Lys Gln Asp Arg Gly Glu Leu Lys Leu Leu Leu Leu 45

Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile 50 55 60

Ile His Gly

<210> 87

<211> 66

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
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<400> 87

Met Gly Cys Thr Val Ser Thr Gln Thr Ile Gly Asp Glu Ser Asp Pro 1 10 15

Phe Leu Gln Asn Lys Arg Ala Asn Asp Val Ile Glu Gln Ser Leu Gln 20 25 30

Leu Glu Lys Gln Arg Asp Lys Asn Glu Arg Lys Leu Leu Leu Gly 35 40 45

Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu 50 60

His Val

<210> 88

<211> 66

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 88

Met Gly Cys Thr Val Ser Thr Gln Thr Ile Gly Asp Glu Ser Asp Pro 1 10 15

Phe Leu Gln Asn Lys Arg Ala Asn Asp Val Ile Glu Gln Ser Leu Gln 20 25 30

Leu Glu Lys Gln Arg Asp Lys Asn Glu Val Lys Leu Leu Leu Gly 35 40 45

Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Lys Ile Ile 50 55 60

His Glu 65

<210> 89

<211> 66

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 89

Met Gly Cys Thr Val Ser Thr Gln Thr Ile Gly Asp Glu Ser Asp Pro $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$

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Phe Leu Gln Asn Lys Arg Ala Asn Asp Val Ile Glu Gln Ser Leu Gln
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Leu Glu Lys Gln Arg Asp Lys Asn Glu Val Lys Leu Leu Leu Gly
Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Lys Ile Ile
His Glu
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Leu Glu Lys Gln Arg Asp Lys Asn Glu Leu Lys Leu Leu Leu Gly
Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile
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His Gly
65
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Trp His Trp Leu Gln Leu Lys Pro Gly Gln Pro Met Tyr
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<210> 92
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<213> Saccharomyces cerevisiae
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Trp His Trp Leu Gln Leu Lys Pro Gly Gln Pro Met Tyr
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<213> Saccharomyces cerevisiae
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<222> (1)..(39)
<400> 93
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Trp His Trp Leu Ser Leu Ser Pro Gly Gln Pro Met Tyr
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<210> 94
<211> 13
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<213> Saccharomyces cerevisiae
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Trp His Trp Leu Ser Leu Ser Pro Gly Gln Pro Met Tyr
<210> 95
<211> 39
<212> DNA
<213> Saccharomyces cerevisiae
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<221> CDS
<222> (1)..(39)
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tgg cat tgg ttg tcc ctg gac gct ggc cag cct atg tac
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Trp His Trp Leu Ser Leu Asp Ala Gly Gln Pro Met Tyr
                5
                                     10
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<210> 96
<211> 13
<212> PRT
<213> Saccharomyces cerevisiae
<400> 96
Trp His Trp Leu Ser Leu Asp Ala Gly Gln Pro Met Tyr
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<211> 39
<212> DNA
<213> Saccharomyces cerevisiae
<220>
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<222> (1)..(39)
<400> 97
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Trp His Trp Leu Thr Leu Met Ala Gly Gln Pro Met Tyr
                5
                                     10
<210> 98
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Trp His Trp Leu Thr Leu Met Ala Gly Gln Pro Met Tyr
<210> 99
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<222> (1)..(39)
<400> 99
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Trp His Trp Leu Gln Leu Ser Ala Gly Gln Pro Met Tyr
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<210> 100
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<212> PRT
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<211> 39
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Trp His Trp Leu Arg Leu Gln Ser Gly Gln Pro Met Tyr
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Trp His Trp Leu Arg Leu Gln Ser Gly Gln Pro Met Tyr
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<222> (1)..(39)
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Trp His Trp Leu Arg Leu Ser Ala Gly Gln Pro Met Tyr
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Trp His Trp Leu Arg Leu Ser Ala Gly Gln Pro Met Tyr
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Trp His Trp Leu Ser Leu Val Pro Gly Gln Pro Met Tyr
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Trp His Trp Leu Ser Leu Val Pro Gly Gln Pro Met Tyr
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Trp His Trp Leu Ser Leu Tyr Pro Gly Gln Pro Met Tyr
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Trp His Trp Leu Ser Leu Tyr Pro Gly Gln Pro Met Tyr
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Trp His Trp Leu Arg Leu Gln Pro Gly Gln Pro Met Tyr
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Trp His Trp Leu Arg Leu Gln Pro Gly Gln Pro Met Tyr
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Arg Ile Asp Thr Thr Gly Ile Thr Glu Thr Glu Phe Asn Ile Gly Ser
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Ser Lys Phe Lys Val Leu Asp Ala Gly Gly Gln Arg Ser Glu Arg Lys
Lys Trp Ile His Cys Phe Glu Gly Ile Thr Ala Val Leu Phe Val Leu
Ala Met Ser Glu Tyr Asp Gln Met Leu Phe Glu Asp Glu Arg
                        55
<210> 112
<211> 62
<212> PRT
<213> Saccharomyces cerevisiae
<400> 112
Arg Val Leu Thr Ser Gly Ile Phe Glu Thr Lys Phe Gln Asn Asp Lys
                                     10
Val Asn Phe His Met Phe Asp Val Gly Gln Arg Asp Glu Arg Lys
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                                                     30
            20
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Lys Trp Ile Gln Cys Phe Asn Asp Val Thr Ala Ile Ile Phe Val Val

45

40

Ala Ser Ser Ser Tyr Asn Met Val Ile Arg Glu Asp Asn Gln 50 55 60

<210> 113

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<213> Saccharomyces cerevisiae

<400> 113

Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe Lys Asp 1 5 10 15

Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu Arg Lys
20 25 30

Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe Cys Val $35 \hspace{1cm} 40 \hspace{1cm} 45$

Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Asp Glu Glu Met 50 60

<210> 114

<211> 62

<212> PRT

<213> Saccharomyces cerevisiae

<400> 114

Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe Lys Asp 1 5 10 15

Leu Tyr Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu Arg Lys 20 25 30

Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe Cys Val 35 40 45

Ala Leu Ser Asp Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu 50 60

<210> 115

<211> 62

<212> PRT

<213> Saccharomyces cerevisiae

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Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe Lys Asn 1 5 10 15

Leu His Phe Arg Leu Phe Asp Val Gly Gly Gln Arg Ser Glu Arg Lys 20 25 30

Lys Trp Ile His Cys Phe Glu Asp Val Thr Ala Ile Ile Phe Cys Asn 35 40 45

Ala Leu Ser Gly Tyr Asp Gln Val Leu His Glu Asp Glu Thr 50 55 60

<210> 116

<211> 62

<212> PRT

<213> Saccharomyces cerevisiae

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Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Glu Asn 1 5 10 15

Ile Ile Phe Lys Met Val Asp Ala Gly Gly Gln Arg Ser Glu Arg Lys 20 25 30

Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val 35 40 45

Ala Leu Ser Glu Tyr Asp Gln Cys Leu Glu Glu Asn Asn Gln 50 55 60

<210> 117

<211> 62

<212> PRT

<213> Saccharomyces cerevisiae

<400> 117

Arg Met Pro Thr Thr Gly Ile Asn Glu Tyr Cys Phe Ser Val Gln Lys 1 5 10 15

Thr Asn Leu Lys Ile Val Asp Ala Gly Gly Gln Arg Ser Glu Arg Lys 20 25 30

Lys Trp Ile His Cys Phe Glu Asn Ile Ile Ala Leu Ile Tyr Leu Ala $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$

Ser Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn 50 60

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Leu Leu Leu Gly Ala Gly Glu Ser Gly
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Leu Leu Leu Gly Ala Gly Glu
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gaga
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Ser Lys Phe Lys Val Leu Asp Ala Gly Gly Gln Arg Ser Glu Arg Lys
Lys Trp Ile His Cys
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